The Conception of Creation of the Few-component Oil-based Concervation Materials Against Steel Atmospheric Corrosion.

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The conception is based on: 1.minimization of the number of components in the conservation materials (CM). The optimum would be a two-component system consisting of a solvent-support and a multifunctional corrosion- resistant thickening additive with other required functions; 2.preparation of CM having high solubilizing effect relative to water; 3.ecological safety; 4.simplicity of deconservation and residual effect; 5.sufficient efficiency of protection, with the cost adequate to the corrosion activity of the environment. The production resources for the oil-soluble corrosion inhibiting agents are:1.chemical and petrochemical industry; 2.industrial wastes or bottoms of the basic organic and petrochemical synthesis; 3.new materials due to the military industry conversion; 4.ecological pure remnants of timber chemical production. We carried out a search for multifunctional components satisfying the above requirements. The complex investigation of the polyfunctional nature of such oil-soluble surface active substances (SAS) as higher carboxylic acids, aliphatic amines, higher aliphatic ethoxyamines, amides of higher carboxylic acids, aminoamides, some derivatives of hydrazine was fulfilled.

There were investigated: 1.the thickening ability of SAS with respect to mineral oils (industrial, transformer, motor and other) in 293 - 353 K temperature range; 2.the influence of the SAS concentration in the oil compositions, kinematic viscosity of the latter and temperature on the thickness of protecting films, deposited at the metal surface; 3.the influence of the SAS structure (the length of the hydrocarbon radical, the presence of the double bonds and etcetera) on the thickening ability and the inhibitor action with respect to carbonaceous steel in atmospheric environment; 4.the water absorption by the protecting films from distilled water and salt solutions; 5.the water penetration through the protecting films as a function of a relative air humidity, the SAS concentration and the film thickness; 6.the influence of the protecting films of the above CM on the decrease in the corrosion rate of the carbonaceous steel, on the corrosion potential and the kinetics of the electrode reactions in 0,5M NaCl solution. It was shown that the investigated SAS had the sufficient protecting efficiency and thickening power. They provide a formation of the sufficient stable emulsions when the protecting oil films absorb some water. The dry oil films and the emulsive films containing the above SAS provide the protecting efficiency against steel atmospheric corrosion up to 80-95